

Ginkgo biloba: Local Experiences

Ales Hahn and Kristina Stolbova

Ear, Nose, and Throat Department, Third Medical Faculty of Charles University,
Prague, Czech Republic

Abstract: *Ginkgo biloba* (EGb 761) as a phytotherapeutic agent used in otoneurology, psychiatry, and ophthalmology. We studied the efficacy of therapy with EGb 761 in 72 patients (44 male and 28 female) with chronic cochleovestibular disorders. We used pure-tone audiometry, measuring pure-tone average, speech reception threshold, and speech discrimination score. Then we used craniocorpography to measure lateral body sway and angular deviation. Finally, we used nystagmography (central nystagmic frequency). Also, we assessed subjectively the variation in patients' comfort. We concluded that EGb 761 has a very good effect on both postural and oculovestibular reflexes. Also, hearing was improved, and patients' comfort was considered to be heightened by the therapy.

Keywords: cochleovestibular disturbances; *Ginkgo biloba*; audiometry; craniocorpography

MATERIALS AND METHODS

Seventy-two patients (44 male and 28 female) suffering from chronic cochleovestibular insufficiency were included in our study. The mean age of subjects was 52.3 years. This group included only outpatients.

The main parameter for evaluating the efficiency of hearing functions was pure-tone audiology—specifically, pure-tone average in decibels; speech reception threshold in decibels; and speech discrimination score in percentages.

For the vestibular test and evaluation of postural and oculovestibular functions, the values of central nystagmic frequency and lateral body sway (LBS), with angular deviation (AD) in degrees, were used. Further, patients' subjective evaluations were taken into account. The patient group consisted predominantly of individuals who had been treated for many years by numerous therapeutic modalities. The prospective study focused on patients suffering from cochleovestibular insufficiency (i.e., showing both cochlear and vestibular pathological processes). The duration of complaints ranged between 18 and 72 months.

The patients were given two tablets either of Tanakan or Tebogan twice daily (i.e., 160 mg/day). Initially,

patients were seen for an introductory examination, which was followed by a washout phase during the next 2–4 weeks. The control examinations were performed in the third and sixth weeks after the start of therapy.

RESULTS

The audiometric results are shown in Table 1. The results of the two main craniocorpographic parameters of vestibulospinal reflexes (LBS and AD) obtained in the course of therapy are shown in Table 2. The oculovestibular reflex results are recorded as the central frequency of postcaloric nystagmus (beats/30 sec/acme of postcaloric reaction): Measurements (percentage of deviation of limits) were obtained at baseline (42.5%), week 3 (29.8%), and week 6 (16.7%).

The subjective assessment of patients' comfort or discomfort was rated on a 5-point scale. Their subjective best evaluated results were scored with a 0, whereas their worst conditions were indicated by 5. At the start of therapy, the average subjective score was 4.8; at 3 weeks into therapy, the average subjective score was 2.9; and at the 6-week evaluation, the average subjective score was 2.1.

DISCUSSION

Ginkgo biloba (EGb 761) as a phytotherapeutic agent was registered in our country in 1991. Since that time, it has been used very often for otoneurological, psychi-

Reprint requests: Ales Hahn, Ear, Nose, and Throat Department, Third Medical Faculty of Charles University, Šrobárova 50, Prague, 100 34, Czech Republic. Phone: 420-2-67 16 31 70; fax: 420-2-67- 16 31 70.

Table 1. Hearing Levels in Therapy with EGb 761 (*Ginkgo biloba*)

Hearing Level	Week 0	Week 3	Week 6
SDS (%)	55	62	71
SRT (dB)	34.1	32.0	28.7
PTA (dB)	39.3	35.8	34.1

SDS = speech discrimination score; SRT = speech reception threshold; PTA = pure-tone audiometry.

atric, and ophthalmological indications. As EGb 761 is very effective at various levels of cochleovestibular pathways, pharmaceutical preparations produced from EGb 761 were used in therapy for cochleovestibular disorders [3]. In otology, EGb 761 is used to treat multifactorial disorders; it exerts vasoregulatory effects on blood vessel tonus and, therefore, on vascular permeability.

The hemorrhheological properties of EGb 761 are reduction of blood viscosity, improvement of blood vessel elasticity, and reduction of blood cell aggregation. The tissue effects of EGb 761 are inactivity of free radicals, antiedematous influences, stabilization of cell membranes, neuroprotective properties, and the improvement of metabolic balance.

Table 2. Vestibulospinal Reflexes in Treatment with EGb 761 (*Ginkgo biloba*)

CCG Parameter	Week 0	Week 3	Week 6
LBS (cm)	23.2	21.9	16.1
AD (degrees)	69.5	59.1	48.8

CCG = craniocorpography; LBS = lateral body sway; AD = angular deviation.

The vestibular and auditory system effects of EGb 761 are improvements of pathological changes in the cochlea [1] and support of ultrastructural qualities of vestibular sensory [2].

CONCLUSIONS

In our study, therapy with EGb 761 resulted in a very good, documented effect on the normalization of postural and oculovestibular reflexes. We confirmed improvement of central nystagmic frequency toward the normal values and a decrease of LBS and AD in craniocorpography.

In addition, a dramatic improvement of speech discrimination score was confirmed. This improvement can be explained by the positive effect of EGb 761 on central functions. This finding is supported also by various studies performed in the fields of psychiatry and neurology. Patients' subjective reactions to the effects of therapy were in conformity with the aforementioned conclusions as well.

REFERENCES

1. Maas B, Silberzahn J, Simon R. Zur Wirkung von *Ginkgo-biloba*-Extrakt auf die Wasserstoff-Auswaschvorgänge an der Cochleabasis unter Hypotensiver Ischämie. *Extr Otorhinol* 9:169–172, 1987.
2. Raymond J. Effects de l'extrait de *Ginkgo biloba* sur la préservation morphologique des épithéliums sensoriels vestibulaires chez la souris. *Presse Méd* 15:1484–1487, 1986.
3. Hamman KF. Physikalische Therapie des vestibulären Schwindels in Verbindung mit *Ginkgo-biloba*-Extrakt. *Therapiewoche* 35:4586–4590, 1985.